UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,781,124 B2
APPLICATION NO. : 09/927608
DATED : August 24, 2004
INVENTOR(S) : Armin Heinz Hayn

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The claims are replaced by claim 1-19 as shown below:

Col. 5, lines 20-34

1. Apparatus for detecting charged particles, the apparatus comprising a chamber for receiving said particles and being such that, in use, at least a partial vacuum is maintained in the chamber; an impact responsive sensor for detecting particles incident thereon, at least the part of the sensor on which the particles are incident being situated in the chamber; an accelerating electrode for providing, in the chamber, an electric field for accelerating charged particles therein towards the sensor and an electrically conductive barrier sealing an inlet to the chamber to allow said partial vacuum to be maintained, the baffler means being sufficiently thin to enable the charged particles to be detected to travel therethrough, and being electrically isolated from the accelerating electrode so as to be capable of being maintained at a different potential from the latter.

Col. 5 lines 35-38

2. Apparatus according to claim 1, in which the accelerating electrode comprises an electrically conductive member situated on or adjacent to the sensor, and a connector for connecting said member to an accelerating voltage.

Col. 5 lines 39-44

3. Apparatus according to claim 1, in which the sensor comprises a scintillator for emitting light in response to the impact of a charged particle therewith.

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Col. 5 lines 45-52

4. Apparatus according to claim 3, in which the accelerating electrode comprises an electrically conductive member situated on or adjacent to the sensor, and a connector for connecting said member to an accelerating voltage, and in which the scintillator incorporates said accelerating electrode.

Col. 5 lines 53-55

5. Apparatus according to claim 4, in which the sensor comprises an Everhart-Thornley detector.

Col. 5 lines 56-61

6. Apparatus according to claim 1, in which the barrier comprises a membrane of metallic foil.

Col. 6 lines 1-2

7. Apparatus according to claim 6, in which the foil is of aluminium.

Col. 6 lines 3-4

8. Apparatus according to claim 7, in which the aluminium foil is of a thickness of 7.5nm.

Col. 6 lines 5-6

9. Apparatus according to claim 6, in which the barrier further comprises a support which extends across said inlet behind the foil to support the latter against pressure exerted on the membrane by gas outside the chamber.

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Col. 6 lines 7-8

10. Apparatus according to claim 1, in which the apparatus further includes an electrically conductive cage mounted in front of, but electrically insulated from, the barrier, the cage being connectable to an accelerating voltage for drawing particles towards the barrier, the cage being so constructed as to allow the passage of particles therethrough.

Col. 6 lines 9-12

11. Apparatus according to claim 1, in which the apparatus includes a pump connected to, and operable to evacuate, the chamber.

Col. 6 lines 13-19

12. Apparatus according to claim 2, in which the apparatus includes a voltage source for applying a first accelerating voltage to said accelerating electrode and a second accelerating voltage of the same polarity as, but lower than, the first accelerating voltage, to the barrier.

Col. 6 lines 20-21

13. Apparatus according to claim 12, in which the apparatus further includes an electrically conductive cage mounted in front of, but electrically insulated from, the barrier, the cage being connectable to an accelerating voltage for drawing particles towards the barrier means, the cage being so constructed as to allow the passage of particles therethrough, and in which the voltage source is also operable to apply to the cage a further voltage, of the same polarity as, but lower than, the second voltage.

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Col. 6 lines 22-23
14. Apparatus according to claim 10, in which the cage is part-spherical or ellipsoidal.

Col. 6 lines 24-31
15. A scanning electron microscope having a sample chamber for holding a sample to be imaged in a gaseous environment, an electron beam generator for generating a scanning beam of electrons and directing said beam onto a sample in said sample chamber, wherein said chamber also contains a detector for detecting secondary electrons emitted by the sample, said detector comprising apparatus according to claim 1.

Col. 6 lines 32-39
16. A microscope according to claim 15, in which the accelerating electrode comprises an electrically conductive member situated on or adjacent to the sensor, and a connector for connecting said member to an accelerating voltage, wherein the electrically conductive member and barrier means are connected to a voltage source for applying a voltage of +10 kV to the member and of 0 to +1 kV to the barrier means.

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Col. 6 lines 40-51

17. A method of detecting charged particles in a gaseous environment, the method comprising the steps of allowing or causing said particles to pass through an electrically conductive barrier at the inlet to a chamber in which at least part of an impact responsive sensor is situated; accelerating particles in the chamber towards the sensor, by means of an electric field in the chamber, while maintaining the chamber at a lower pressure than said environment and maintaining the barrier at a potential that at least reduces the intensity of electric field passing through the barrier and into the environment, wherein the barrier allows the passage of said particles whilst enabling the lower pressure to be maintained in the chamber.

Col. 6 lines 52-55

18. A method according to claim 17, wherein the step of maintaining a lower pressure in the chamber is achieved by maintaining at least a partial vacuum in the chamber by means of a pump connected to an outlet of the chamber.

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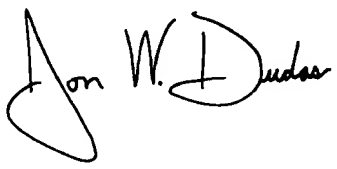
Col. 6 lines 56-59

19. A method according to claim 17, further comprising the step of maintaining the barrier at a different potential from that of an accelerating electrode, for creating said electric field in the chamber.

Signed and Sealed this

Eighteenth Day of September, 2007



JON W. DUDAS
Director of the United States Patent and Trademark Office